
Monetary policy and the exchange rate

Mervyn King, Executive Director and Chief Economist of the Bank, considers⁽¹⁾ the implication of the recent rise in sterling for inflation and interest rates. He argues that any coherent analysis of the implications of a change in the exchange rate must consider why the exchange rate has moved. Different explanations have different implications for inflation and monetary policy. It is for this reason, argues Mervyn King, that there is no mechanical link between the exchange rate and domestic interest rates.

The outlook for output, inflation and therefore monetary policy has been clouded by the sharp and unexpected appreciation of sterling since last August. The effective exchange rate has risen by 17%, although there have been marked differences among the bilateral rates. Against the dollar, sterling has appreciated by only 6%, but against the Deutsche Mark it has risen by no less than 21%. That has occurred against the backdrop of a gradual acceleration of activity in the UK economy to above-trend rates of growth, driven primarily by domestic demand. But equally important in the rise of sterling has been sluggish demand in continental Europe, with their and our economies at different phases of the business cycle.

What are the implications of the rise in sterling for inflation and interest rates? The first thing to say is that no central bank is, or can be, indifferent to the exchange rate, or to the information that it provides. The exchange rate is not just another price, to be seen in the same terms as the price of washing machines or restaurant meals. It is in fact the price of our money—sterling—in terms of other people's money—dollars, Deutsche Marks, or even a weighted basket of other currencies.

It should also be immediately clear that there is no such thing as 'the' exchange rate. There are many exchange rates. There are bilateral exchange rates against each of the other currencies in the world. And there is also the 'effective' exchange rate, which is the value of sterling against a trade-weighted basket of the currencies of our major trading partners. As I noted at the beginning, these exchange rates have changed in rather different ways. That should not be surprising. The exchange rate is a relative price between two currencies. So any developments that affect the value of either currency will affect the exchange rate between them. Changes in monetary policy in Britain will certainly have an effect on the exchange rate between sterling and, say, the Deutsche Mark. But so will changes in German monetary policy. So a change in the sterling-Deutsche Mark exchange rate could reflect actual or expected changes in either British or German monetary policy, or both. That simple observation should make us cautious about drawing strong conclusions about the

implications for domestic monetary policy of a change in the exchange rate.

Nevertheless, people do so and some go so far as to draw the bold conclusion that a 10% appreciation in sterling would, if sustained, lead to a 10% reduction in the UK price level. Of course, there are some circumstances in which that would be true. But, as a general statement, it is false. Since August, sterling has appreciated by more than 20% against the Deutsche Mark. Does this mean that the rise in sterling will lead to a 20% fall in the British price level? Or does it mean that the equivalent fall in the Deutsche Mark against sterling implies a 20% rise in the German price level? Clearly, both cannot be true at the same time. And even if we accepted that the change in the exchange rate would, if sustained, correspond to a 20% change in relative price levels, that tells us rather little about inflation in the two countries. An appreciation does not necessarily imply a fall in inflation in the medium term. Since 1957, the Deutsche Mark has risen by 345% against sterling. But German prices did not fall by 345%; rather they rose by 216% over the period. The Deutsche Mark appreciation reflected higher inflation in Britain—where prices rose by 1,230%—rather than price falls in Germany.

That simple example is an illustration of why the first step in any coherent analysis of the implications of a change in the exchange rate for domestic inflation is to pose the question—why has the exchange rate changed? Of course to pose the question is not to answer it, and there is no doubt that it is difficult to understand why sterling has risen so much since August. There is no doubt that sterling's appreciation has started to affect the balance between domestic and external demand in the economy, and so poses a dilemma for monetary policy. But in the absence of some attempt at analysis, no clear conclusions about inflation can be drawn.

It should also be apparent that any attempt to construct a simple 'monetary conditions index' (MCI) by adding together domestic interest rates and the exchange rate is akin to adding together apples and oranges. One refers to only the domestic economy, while the other may refer to either

(1) In a speech to the Governors of the National Institute of Economic and Social Research, 27 February 1997.

the domestic or overseas economy. Moreover, one refers to an exogenous instrument of monetary policy and the other to an endogenous variable, which may be responding to changes in interest rates or to other shocks to either the domestic or overseas economy. That latter distinction is important because it means that interest and exchange rates, rather than act as substitutes for each other, may in many instances move in a complementary manner. For example, an expected tightening of monetary policy will lead not only to higher market interest rates in the short term, but also to an appreciation against the currencies of countries in which there has been no such expected change in policy. And if interest rates do not move in line with market expectations, then the exchange rate is likely to fall back.

But the problems with an MCI go deeper. It is impossible to analyse the rise in the exchange rate without trying to understand those factors that were responsible for the appreciation. Take a simple example. If the price of apples were to rise, what would one conclude about the future demand for and supply of apples? At first sight, the answer might appear simple—the rise in price would lead to a fall in demand and stimulate greater supply. But think about it for a moment. Suppose the rise in the price of apples had arisen because of an increase in demand—perhaps the health-conscious had switched from bananas to apples. Then a higher price of apples might actually go hand in hand with higher, not lower, demand. Equally, suppose the supply of apples had fallen because of a disease in the apple orchards of Kent. In that case, the price increase might be accompanied not by a rise but by a fall in the supply of apples. It is clear that the association between quantity and price cannot possibly be analysed without asking the question of what caused the initial price rise.

Exactly the same is true of exchange rates—indeed it is even more complicated because the exchange rate is analogous to the relative price of apples and bananas. So demand and supply conditions in both markets come into play. The impact of a higher sterling exchange rate on the demand for, and supply of, exports depends on precisely what lay behind the initial appreciation. Why does this matter? It matters, first, because the reason for the appreciation may affect expectations about whether or not the higher exchange rate will persist. But it matters too because the appreciation has two effects: a direct effect on domestic prices through a reduction in import prices and an indirect effect via a smaller contribution of net trade to output growth. The first effect is short-lived. The second may persist and influence the degree of inflationary pressure for some time. So exchange rate developments will influence the optimal interest rate setting. But the extent to which they do so will depend on why the exchange rate moved, and cannot be expressed in any mechanical link between interest and exchange rates. Once the shocks to the economy that were responsible for any change in the exchange rate have been identified, then, but only then, is it

possible to draw out the implications of that for output and inflation, and hence for the appropriate level of domestic interest rates.

The measurement of ‘monetary conditions’ is not at all a straightforward matter. And the more you look at it, the more elusive it becomes. In the last resort, perhaps the best measure is the inflation forecast itself.

That proposition is clearly understood by those central banks, such as the Bank of Canada, that use an MCI. They do not use it to decide how to alter interest rates in the wake of shocks to the economy that have changed the exchange rate. Rather, the MCI is used to assess high-frequency changes in interest rates during periods when there are no significant shocks to the economy, as has been made clear in speeches by Bank of Canada officials (for example, Freedman, 1995). The index is useful in Canada because the authorities operate in money markets to change interest rates much more frequently than the monthly interval at which policy decisions are made in the United Kingdom and elsewhere. And it is clear from the use of the MCI in both Canada and New Zealand that there is no mechanical link from exchange rates to interest rates. That is because economic shocks affect both the actual and the desired values of the MCI. Different shocks will alter the relationship between the two, and so the appropriate policy response depends on the nature of the shock.

If the simple-minded use of an MCI is flawed, then, for exactly the same reasons, so too is the idea that there is a simple rule of thumb which equates a given percentage rise in the exchange rate to a 1% rise in interest rates. It makes little sense to trade off interest rates and the exchange rate according to some pre-determined constant weights. The origin of the so-called 4:1 rule—by which a 4% rise in the exchange rate was thought to be equivalent to a 1% rise in interest rates—was the use of large econometric models in which interest rates and the exchange rate were treated as exogenous and independent policy instruments. With floating exchange rates, interest rates and exchange rates are interdependent. Indeed, it is precisely because the exchange rate is, in the jargon, endogenous, that a Reserve Bank of New Zealand discussion paper argued that ‘a standard nominal MCI (ie with nominal interest rates and exchange rates) with prices as a target variable cannot be calculated’.⁽¹⁾

A simple calculation should illustrate why the 4:1 rule appears rather odd in present circumstances. If the 4:1 rule were correct, then the appreciation of sterling since the beginning of August was equivalent to an increase in interest rates of no less than 4½ percentage points. I know of no one who was, or has been, arguing that interest rates needed to rise by this amount to hit the inflation target. It follows, therefore, that any followers of the rule should now be arguing for a substantial reduction in interest rates, of the order of 3% or more. Whatever disagreements exist on the

(1) Nadal-De Simone *et al* (1996).

appropriate level of interest rates, they do not encompass that extreme view. So, in practice, no commentator appears to base their advice on such a rule.

At the risk of stirring up boredom, I have laboured the point that there is no simple mechanical link between the exchange rate and domestic interest rates. That, of course, begs the question of why sterling has in fact appreciated so sharply since August. The February edition of the Bank of England's *Inflation Report* identified a range of possible explanations, each of which has different implications for inflation two years or so ahead, and hence for the appropriate level of interest rates. Those explanations are

set out on pages 46–50 of the February *Report* and there is no need to repeat the analysis here.

What that analysis implies for the Bank's advice on interest rates is explained in the minutes of the monthly monetary meetings, and you will have to wait until 19 March for the next set. My aim tonight has been to explain why, although the exchange rate is an important component of our assessment of the economy and the prospects for inflation, it is not wise to succumb to the superficial attraction of a 4:1, or any other n:1, rule for linking interest rates to changes in the exchange rate. As Keynes and others have warned us, it is better to be roughly right than precisely wrong.

References

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